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TABLE OF CONTENTS

Historical Fund of the Navy Medical Department 2

ABSTRACTS

Elective Splenectomy..... 3
Psychogenic Influences in
Otolaryngology 5
X-Ray Treatment of Acne 7
Problems of Gonorrhea 9
Decline of Tuberculosis 10
Carbon Dioxide Intoxication..... 13
Oxygen Therapy 15

MISCELLANEOUS

A Memorial to Admiral Craig... 17
MSC Officer Assignments
Centralized 18
Course in Psychiatry 19
American Board Examinations'.. 20
Chemical Warfare Defense
Films 21
Procurement of Blood
BuMed Inst. 6530. 1B..... 21
Whole Blood Transfusions
BuMed Inst. 6530. 6 21
From the Note Book 21

DENTAL SECTION

Mouth-to-Mouth Resuscitation
Pocket Cards 24
Effectiveness of Fluoridation ... 25
Malpractice Suits..... 25
Dental Care - 1959..... 26
Course in Oral Surgery 26
Personnel and Professional
Notes 26

RESERVE SECTION

Aerospace Medical Association.. 29
American Optometric Association 29
Quadrennial Physical Exams 29
New Reserve Units 30

PREVENTIVE MEDICINE

Chest Film Survey Procedures ... 31
Leishmaniasis Acquired by
Contagion 36
Recruits' Adenovirus Infections... 39
Incidence of Poliomyelitis 39

HISTORICAL FUND
of the
NAVY MEDICAL DEPARTMENT

A committee has been formed with representation from the Medical Corps, Dental Corps, Medical Service Corps, Nurse Corps, and Hospital Corps for the purpose of creating a fund to be used for the collection and maintenance of items of historical interest to the Medical Department. Such items will include, but will not be limited to, portraits, memorials, etc., designed to perpetuate the memory of distinguished members of the Navy Medical Department. These memorials will be displayed in the Bureau of Medicine and Surgery and at the National Naval Medical Center. Medical Department officers, active and inactive, are invited to make small contributions to the fund. It is emphasized that all donations must be on a strictly voluntary basis. Funds received will be deposited in a Washington, D. C. bank to the credit of the Navy Medical Department Historical Fund, and will be expended only as approved by the Committee or its successor and for the objectives stated.

It is anticipated that an historical committee will be organized at each of our medical activities. If you desire to contribute, please do so through your local historical committee or send your check direct, payable to Navy Medical Department Historical Fund, and mail to:

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Elective Splenectomy

Indications for splenectomy gradually have become broader during the past two decades. As the results of this operation are evaluated, criteria for surgical intervention are becoming more clearly defined. However, indications for splenectomy in the presence of associated blood dyscrasias are not definite; under these circumstances, results frequently are unpredictable. Certainly, the surgeon must be guided by the advice of a competent hematologist before recommending surgical treatment.

At the Lahey Clinic, 220 splenectomies were performed from 1939 to 1957. The authors report these cases, reviewing indications for operation and results obtained. The cases are reviewed according to indications.

Liver Disease. This group is the most challenging to the surgeon because congestive splenomegaly occurring in conjunction with liver disease presents the greatest technical difficulties. Furthermore, the question of benefit is often debatable because of the unpredictable clinical course and subsequent complications attributable to the primary disease.

This group included 83 patients, most of whom had some type of cirrhosis. All had portal hypertension or hypersplenism; some had normal function tests and histologic structure. Splenoportography revealed no evidence of extrahepatic obstruction.

Between 1939 and 1948, 26 patients were operated on, receiving only splenectomy. Shunt procedures had not been widely applied. Indications were splenomegaly with evidence of portal hypertension, hypersplenism, or both. Episodes of upper gastrointestinal bleeding attributed to esophageal varices had occurred in 16 patients. The remaining complained of anemia, weakness, fatigue, and left upper quadrant distress resulting from splenomegaly, dyspnea, or edema. The platelet count was significantly diminished in 6 patients.

Of the 16 patients with a history of bleeding varices, 8 bled within one year postoperatively. Of the 6 patients with abnormal blood findings, the blood reverted to normal in 4 for varying periods of time. Significant clinical improvement was noted in 16 of the 26 patients. The morbidity rate was 50%, with infection constituting the major problem. Two deaths (7.7%) occurred as the result of septicemia and generalized peritonitis.

After 1949, the shunt procedure was employed when indicated. Of 29 patients in this group, 8 had hypersplenism alone; and varices which had bled at least once were present in 21 cases. Splenorenal shunt was the procedure employed in 28 patients.

The morbidity rate was 76% and four operative deaths occurred (14%). The deaths occurred as the result of irreversible shock, wound dehiscence with evisceration and massive hemorrhage followed by liver failure, severe atrioventricular block followed by severe pulmonary edema, and liver failure with bronchopneumonia, respectively.

Of the patients receiving splenectomy after 1949, 28 did not receive a shunt procedure. Hepatomegaly was present in 19 instances; hypersplenism was present in all but one. Sixteen patients demonstrated one of the facets of portal hypertension which might be ameliorated by shunt operation.

Three factors influenced the decision not to perform a shunt: (1) small caliber or unusual friability of splenic vein; (2) operative injury to splenic vein, short splenic vein, or inaccessibility of renal vein; and (3) failure to find varices at operation, together with a relatively normal portal pressure.

The morbidity rate was 29% with a mortality rate of 10.7%; the three deaths were caused by bronchopneumonia with renal failure, intra-abdominal hemorrhage plus pulmonary edema, and liver failure, respectively.

Idiopathic Thrombocytopenic Purpura. This condition must be carefully distinguished from thrombocytopenia of known cause in order to assure a satisfactory response following splenectomy. The clinical findings are primarily those resulting from increased capillary fragility and prolonged bleeding time.

Of the 40 patients in this group, 12 suffered complications of one type or another, and one death occurred. Immediate response was good in 95% of cases. Subsequent follow-up studies revealed recurrent thrombocytopenia in at least 3 patients. In one of these, an accessory spleen was removed 7 years later with gratifying results.

Congenital Hemolytic Anemia. No mortality occurred in this group of 30 patients, and complications occurred in only 2. Splenectomy is effective in preventing the greater part of this type of blood destruction, although it does not change the abnormality leading to spherocytosis. If care is taken to remove accessory spleens, recurrence of anemia or jaundice is rare.

Acquired Hemolytic Anemia. Splenectomy was performed in 22 cases of this type of anemia. The etiologic agent was frequently difficult to ascertain. The most consistent signs and symptoms were anemia, fatigue, and jaundice. Postoperative complications occurred in 6 patients; three deaths occurred attributable to renal failure, liver failure, and atelectasis with bronchopneumonia, respectively.

The clinical and hematologic response was unpredictable in this group; only 12 cases showed a satisfactory result.

Splenomegaly with Hypersplenism (Neoplastic). The indication for splenectomy in this type of hypersplenism is largely dependent on the severity of the cytopenia; hemolytic anemia is frequently an associated condition. In this group, 11 patients had lymphoma, 4 had chronic leukemia, and one had liver metastases 5 years after radical mastectomy.

Complications occurred in 56% and one died during surgery. Five patients were lost to follow-up; of the remainder, 73% were dead in less than one year. In this group, the therapeutic approach should be reevaluated; perhaps early splenectomy—once splenomegaly has become manifest clinically—should be considered.

Splenomegaly with Hypersplenism (Non-neoplastic). This group of 15 patients exhibited varying degrees of thrombocytopenia, leukopenia, and anemia associated with splenomegaly. The decision to perform splenectomy was governed by the nature of the primary condition underlying the hypersplenism, the severity of the hematologic abnormality, and the probable duration of life if the primary disease were allowed to run its course.

Complications occurred in two patients. No deaths occurred. the immediate clinical response to splenectomy was satisfactory in all patients, but hematologic improvement was less predictable.

Cysts of the Spleen. Nine patients were seen with this condition. Abdominal pain or discomfort associated with a feeling of fullness was noted in 8 patients. Operation was performed for relief of symptoms, and to differentiate the lesion from retroperitoneal and pancreatic tumor in two cases. Results were poor in 2 patients with cirrhosis caused by progression of the primary disease; two deaths occurred.

Primary Splenic Neutropenia and Pancytopenia. Five patients were in this group. The diagnosis was established by the presence of cytopenia and splenomegaly with an abundantly cellular marrow. Results were good in two cases, fair in two, and no effect was seen in one. No complications or deaths occurred.

Comments. The decision for splenectomy in any given case is not to be regarded lightly. The operation may be technically difficult and the postoperative path strewn with obstacles. Careful selection of cases is essential.

The mortality rate in the entire series of 220 patients receiving splenectomy was 7%, with a morbidity rate of 34%.

Patients with bleeding esophageal varices constitute a special problem. Portal decompression by splenorenal or portacaval shunt is indicated in the majority of cases. The choice of operation is as yet unsettled. (C. E. Sedgwick, A. H. Hume, Elective Splenectomy - An Analysis of 220 Operations: Ann. Surg., 151: 163-168, February 1960)

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Psychogenic Influences in Otolaryngology

In the practice of otolaryngology, physicians deal with diseases and dysfunctions of certain organs of special sense which are intimately associated with the patient's earliest psychic and physical well being. Is it any wonder, therefore, that so many of the illnesses which are seen exhibit varying degrees of psychogenic influence in their etiology? The need of psychiatric consultation must be recognized, but the problem of referral is not always easy. Many of these patients simply need guidance in the solution of minor problems which arise as a result of the demands of a competitive society. It is essential to help solve some of these psychic problems if the

physicians is to prevent relatively minor anxieties from becoming serious neuroses. According to Weiss and English, there is an interaction of biochemical changes and emotions; emotional tensions through the autonomic nervous system influence the body chemistry, and the changed body chemistry, in turn, reacts upon the emotional life. Furthermore, it must be remembered that psychologic disturbances begin in infancy.

Headache. In the field of otolaryngology, headache is a frequent complaint. The causes may be purely organic or purely psychogenic—frequently both. Sinus disease, migraine, and histaminic cephalalgia are relatively easy to diagnose. A common type of psychogenic headache is the so-called tension headache. The emotional factor is usually nothing more than nervous tension generated by hard and prolonged work. The symptoms are extremely variable and commonly recognized; the complaint is disproportionate to the signs. If organic disease can be ruled out, treatment is primarily psychotherapy with physical therapy often of value.

Dizziness, Deafness, and Tinnitus. This is the triad of Meniere's disease to which must be added the symptom of fullness or pressure in the ear. Many physical factors are recognized as being causative, some of them influenced directly or indirectly by the patient's emotional reactions. Stressful situations, whether they are recognized and handled consciously by the person or avoided because of the displeasure they produce, are usually the trigger factors which initiate an attack. Frequently, it is difficult to relate the somatic syndrome to any given psychic factor. However, the otolaryngologist can often help the patient solve simple problems of anxiety which are based on minor tensions at work or in the home. In many cases, psychotherapy by a psychiatrist is necessary.

Psychogenic Deafness. Importance of this condition became apparent during and after World War II when disabilities due to hearing impairment had to be critically evaluated in order to establish a basis for discharge from the service and for compensation. Overt malingering in a person who has normal hearing is usually not difficult to prove. In most cases of psychogenic deafness, there is no conscious motive to deceive. The overt malingerer is a problem of diagnosis, not of treatment. The person with psychogenic deafness, on the other hand, is both. Psychogenic deafness is also seen in children.

Vasomotor and Allergic Rhinitis. Existence of anatomic abnormalities or atopic allergy in many patients leads to the assumption that hyperfunction of the nasal structure is essentially an organic phenomenon. Furthermore, physiologic engorgement of the turbinates occurs when the organism is subjected to certain environmental influences, such as dryness of the air, overheating, drafts, and chilling. But it is known that the turbinate, with its erectile tissue structure, is physiologically related to sexual stimuli and, therefore, susceptible to psychogenic influences.

Asthma. Like vasomotor rhinitis, asthma is frequently triggered in a susceptible person by emotional stimuli, such as grief, anxiety, or frustration.

Either an emotional or allergic factor may precipitate an attack, but usually they coexist in a physiologic "summation of stimuli."

Lump in the Throat. In this era of cancer-consciousness, many patients are seen with ill-defined symptoms referable to the pharynx. In these cases, effective therapy is the reassurance derived from a carefully performed examination which, by its meticulousness, convinces the patient that the doctor has not found evidence of malignancy. In some patients, however, the phobia is simply the last link in the psychosomatic chain. If the original cause of anxiety can be determined, success in eliminating the primary, as well as the secondary, etiologic factor may be achieved.

Abnormalities of the Voice. The entire respiratory system is subject to somatic reactions from stimuli arising from anxiety, hostility, or frustration. Sighing, crying, and variations in the depth and rate of respiration are common manifestations of emotional stress.

Abnormalities of speech, such as stuttering and stammering, are recognized to be based on psychic influences in the early development of the child. Functional hoarseness or hysterical aphonia are commoner in adults.

Psychotic patients, although infrequently seen, should be recognized because they are potentially dangerous to others as well as to themselves. Not the least important factor in some persons is the development of serious neuroses or psychoses when the somatic protection of their psychic illness is suddenly removed by treatment. There are occasional patients with otosclerosis, for instance, in whom the improvement of hearing after surgery triggers a psychotic episode.

Awareness of the problem of psychosomatic disease in otolaryngology is worthy of emphasis. (V. R. Alfaro, *Psychogenic Influences in Otolaryngology*: A. M. A. Arch. Otolaryng., 71: 1-7, January 1960)

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X-Ray Treatment of Acne

Since the advent of the atom bomb and the adverse publicity which it prompted, the effect of radiation on the human body continually presents itself in the mind of the patient when x-rays, radium, and even thorium X are to be used therapeutically. Rather than fear radiotherapy, it is well for the patient to realize that x-rays and radioactive isotopes used in medicine for diagnostic and therapeutic purposes are for the benefit of mankind and, as such, are well controlled.

The authors reviewed the records of 1,265 patients, who complained of acne vulgaris in its various forms, to determine whether x-rays were a necessary therapeutic adjunct, and evaluated the contributing or causative factors.

As early as 1714, acne was attributed to alimentary juices; and, in 1833, first mention of milk products as one of the acne-causing foods was mentioned. Subsequently, almost every observer and analyst of statistical information has proposed a different set of etiologic factors in the production of acne.

After 265 patients were discarded from the series for various reasons, analysis of the remaining 1,000 revealed a suspected etiology of diet in 448, endocrine imbalance in 302, neurogenic factors in 120, and allergic complications in 80 cases.

Treatment before 1945 usually employed rigid dietary restrictions and x-ray therapy in about two-thirds of the patients. After 1945, dietary restrictions were reduced to avoidance of milk and its byproducts, chocolate, citrus fruits, nuts, grapes, iodized salt, and foods high in iodine content. Furthermore, x-ray was employed in only about one-fifth of the patients. The results show improvement in the period after 1945 when both diet and x-ray therapy played a less prominent role. The over-all results of treatment indicate that those patients not treated by x-ray fared somewhat better, consistently, than those who received irradiation.

Tension in its various forms—although often obscured—is believed to be an important, underrated cause of acne. Its effect upon the skin is more or less indirect as it is capable of disturbing the body metabolism including the endocrine balance. This importance of tension as a causative factor in acne is substantiated by the fact that patients while on a pleasure trip can often eat with impunity certain foods that have been known to cause exacerbations at home.

Although 8% of the author's patients suffered from various forms of allergy, he considers this figure to represent a low normal.

Therapeutic results obtained in patients treated after 1945, especially in the nonradiated, speak well for the effectiveness of such new modalities as sulfonamides, antibiotics, hormones, and steroid-containing lotions.

The ultimate conclusion was that evidence is lacking to justify use of x-rays in management of acne vulgaris unless other methods prove ineffective. (S. C. Way, X-Rays vs. Other Modalities in the Treatment of Acne Vulgaris: A.M.A. Arch. Dermat., 81: 103-109, January 1960)

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Change of Address

Please forward requests for change of address for the News Letter to: Commanding Officer, U. S. Naval Medical School, National Naval Medical Center, Bethesda 14, Md., giving full name, rank, corps, and old and new addresses.

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Problems of Gonorrhea

The limitations and special usefulness of clinical and laboratory techniques in diagnosis of gonorrhea are not well understood by the average practitioner today. Many physicians and clinics, because of complacency or lack of ancillary aid in diagnosis, employ measures for treatment, management, and control of this disease which appear poorly justified in the light of more recent research findings.

Diagnosis in the female is a major factor in both clinical and control aspects of gonorrhea. Studies by the Public Health Service utilizing the best clinical and laboratory groups indicate that clinical information plus smears and cultures result at best in the diagnosis of only 50 to 75% of females having gonorrhea.

Such information should clearly point out the limitations in current techniques for diagnosis and place in proper perspective the importance of the epidemiologic diagnosis of this disease. Certainly, control efforts cannot succeed if one out of every two to four women who have gonorrhea cannot be detected by current laboratory procedures and are available in the community as a focus for continued transmission of the disease.

There is a rather commonly held concept that the organisms causing gonorrhea and syphilis are highly susceptible to the action of penicillin. While this is true concerning Treponema pallidum, it is not, and never has been, true for Neisseria gonorrhoeae. It has always taken more penicillin per organism to achieve a minimal inhibitory concentration (MIC) for the gonococcus than for the treponeme. Furthermore, the gonococcus has been observed to have a wide range of susceptibility to the action of penicillin, depending upon the strain of the organism tested. And, over the past decade, natural isolates of the gonococcus have indicated a definite and continuing proportional decrease in sensitivity to penicillin.

Based on findings in recent years, a working hypothesis for treatment and management of gonorrhea is presented.

(1) Sufficient penicillin must be given the patient so that the units per milliliter of serum will exceed the highest known MIC associated with any strain of the gonococcus in this country. Roughly, at this time, this should mean a serum level of 0.35 unit per milliliter.

(2) Such a level must be maintained in contact with the gonococcus for a period of at least 24 hours, preferably 48 hours.

(3) Provisions should be made for treatment with very long-acting penicillin. This is necessary for two reasons: Although 48 hours of exposure will kill all gonococci in vitro, it is not known when such exposure is liable to occur in vivo, particularly in the female; and, after being cured of gonorrhea, the individual may return to a milieu of venereal disease as a susceptible person and soon will become reinfected.

This treatment, termed "antibiotic quarantine," has been demonstrated to be effective in reducing repeaters for treatment at clinics.

There is another factor to be considered in relation to use of a long-acting penicillin. If it is true that, particularly in the female, certain tissue cells of the genitourinary tract are capable of taking viable gonococci within them and protecting such organisms from the effects of penicillin—as has been demonstrated in tissue cultures—then with the dissolution of the host cell, viable gonococci are available for autoinfection of the host. This hypothesis has not been confirmed by clinical research.

In these days of rediscovery of nongonococcal urethritis (NGU), it would be wise to take routine smears on male patients to aid in differentiation between gonorrhea and NGU. When occasional treatment failures of gonorrhea occur and NGU has been excluded, cultures should be obtained and the susceptibility of the gonococcus to penicillin determined to aid as a guide in therapy. It is worthwhile to remember that cases of asymptomatic gonorrhea in the male have been reported.

For many years, it has been widely accepted that the endotoxin of N. gonorrhoeae responsible for the basic cellular pathology of the disease is a protein. New studies indicate that the endotoxin is not a protein, but rather a lipopolysaccharide.

This observation would be of extreme importance in relation to development of specific antigens for serologic testing for gonorrhea, as well as to the possible development of a relatively specific skin test for the disease. Further, as saccharide antigens are usually more closely related to protective immunity than are protein antigens, such studies may lead to a means of developing hyperimmunity in the host sufficient to protect against naturally acquired gonorrhea.

It appears that once again the threshold or a renaissance in new knowledge about the gonococcus and gonorrhea has been reached. One of the many areas of findings is research concerning adaptation of the fluorescent antibody techniques to the gonococcus which could allow for specific detection of gonococci in a stained smear within 30 minutes, or the utilization of this technique for a serologic test for the disease. (W. Garson, G. D. Barton, Problems in the Diagnosis and Treatment of Gonorrhea: Pub. Health Rep., 75: 119-123, February 1960)

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Decline of Tuberculosis

Poised for a knockout assault on tuberculosis, the Public Health Service and the National Tuberculosis Association last November invited a distinguished panel to advise on use of available resources for accelerating the disease's decline.

The following statements reflect observations of the views expressed by individual conferees:

The Goal. Tuberculosis can be extinguished as a public health problem. In favored settings, this eventuality is likely relatively soon. For the Nation as a whole, tuberculosis is a continuing threat, but the termination of this threat to public health is a reasonable social goal.

The Means. To reach this goal, a common, popular determination is needed. In each community, a central responsible authority, dedicated to the end that all cases of tuberculosis be treated adequately and for sufficient time by chemotherapy either in public facilities or by private physicians, will be required to remove the public health hazard.

The Time. If the opportunity to end tuberculosis is not seized now, it may be lost indefinitely. Medications that are effective today must be applied broadly before the tubercle bacillus develops resistance to these drugs. Otherwise, in a susceptible population, the disease may rise again to a point which defies control.

The Scope. It is estimated that in 1956 about 800,000 Americans with tuberculosis needed supervision in the public health interest—about half were receiving such supervision.

The disease tends to be concentrated more heavily in a few States and in large cities—specifically in some areas or neighborhoods. It is most frequent in the older population which, generally, was exposed to the bacillus in years past.

Present trends indicate that as the older population passes on there will be fewer persons with infection incurred in the past that can break down into disease, the result of such factors as malnutrition and other stresses. As there are progressively fewer cases to spread infection, the number occurring as a result of new infection will lessen also. Assuming that no disaster, depression, famine, or other tragic event reverses the trend, it is possible that tuberculosis will slowly die without increased effort at repression. But such an assumption is dangerous. When means are at hand to deliver the coup de grace, aggressive action seems indicated.

The challenge is to find and disinfect patients with active disease or persons in a vulnerable category, especially those who once had active disease. In view of the high probability of extra-pulmonary complications from the tuberculous infections in infants, effective chemotherapy for those with positive reactions to tuberculin tests should be prescribed without exception.

The Treatment. Combinations of antituberculosis drugs—applied adequately and without interruption—are capable of reversing infectiousness and curing tuberculosis in most patients. Prolonged bed rest is not necessarily important in the majority of cases. At the present time, surgery is indicated less than in the past. Drug treatment consists of selection of an appropriate regimen, usually a combination of two drugs, followed without interruption for many months; determination of patients's infectiousness at regular intervals; and, change of drugs or hospitalization for those who do not improve.

The First Hurdle. The bacillus can be banished from the human environment if infectious cases are found promptly and treated adequately. All new infections are believed to result from fresh, vigorous tubercle bacilli coughed out by an infectious person. Remarkably little is understood about the circumstances which favor infection.

Fresh infections can be found and treated promptly with less trouble and expense if research succeeds in developing an inexpensive, simple, and reliable tuberculin test more satisfactory than those available today.

With present methods of testing and screening, casefinding is likely to be most effective if it is directed to selected populations in terms of the degree of their risk, such as: contacts of active or formerly active patients; adults over 45, especially males; and certain categories known to be vulnerable, especially children under 4, children entering puberty, or persons suffering from malnutrition or living under congested conditions.

Vaccination. Use of BCG, the only available vaccine, should be limited in the United States to certain highly exposed populations.

Strategy. Effective treatment of patients with infectious tuberculosis is the basis of plans to prevent new infections. Attention to the geographic strongholds of tuberculosis needs to have priority over campaigns of mass screening where incidence is relatively low. Later, attention may shift from therapy of diseased patients and investigation of suspect populations to the process of screening for positive reactors to be treated.

Personnel. The main burden of adequate treatment seems likely to be carried increasingly by the general practitioner in private practice, with help from the public health nurse and, in some instances, the medical social caseworker.

Cooperation of patients with treatment, especially if they remain at home under supervision, depends on attention given to their basic needs: food and shelter for the family, money for drugs and other expenses related to illness, suitable employment following treatment, and ordinary friendliness.

Leadership. Criteria of performance and achievement, district by district, State by State, and for the Nation as a whole, will expedite the victory at every stage. Public, voluntary, and professional bodies have the opportunity to establish such criteria for casefinding, diagnosis, reporting, treatment, rehabilitation, and surveillance. It is largely their counsel which will determine whether communities will supply needed drugs and medical services, adequate diet, and home-maker services for tuberculous patients. They can assure that adequate laboratory services will be available to all physicians.

With effective leadership, it is possible that a program for eliminating tuberculosis as a public health problem in the United States can be brought far toward completion within the foreseeable future. (Conference Report, Approach to Zero for Tuberculosis, Pub. Health Report, 75: 103-106, February 1960)

Carbon Dioxide Intoxication

Within the last century, man has escaped early death only to become increasingly susceptible to age and the cumulative small insults of daily existence. Chronic pulmonary disease exemplifies this trend and stands as an ever increasing problem of medical and socio-economic importance. Carbon dioxide intoxication is a part of this picture which must be familiar to every physician who treats long-term pulmonary disease. Yet this symptom complex continues to pass unnoticed and untreated.

Clinical Manifestations. Carbon dioxide intoxication is understood as a syndrome occurring in patients with poor pulmonary function. Any factor or combination of factors which further compromise pulmonary gas exchange may lead to an additional accumulation of carbon dioxide and to an increased acidosis with development of this distinct clinical entity.

Obstructive emphysema and pulmonary fibrosis constitute the most frequent pathologic entities upon which carbon dioxide intoxication becomes superimposed. Carbon dioxide intoxication may then be precipitated by injudicious use of oxygen, sedative or narcotic drugs, bronchial asthma, or surgery and anesthesia.

Symptoms and signs of carbon dioxide intoxication are primarily neurologic and chiefly involve impairment in the level of consciousness ranging from drowsiness and confusion to deep coma. Likewise, various psychologic changes may occur either as the sole manifestation of carbon dioxide intoxication or early in the course of consciousness impairment. Muscle twitching and fine tremors of the extremities or face are the most frequent motor signs. Reflex changes, when present, consist of absent or diminished or unequal deep tendon reflexes. Funduscopic examination may reveal papilledema and/or dark dilated retinal veins.

Increased intracranial pressure may accompany carbon dioxide intoxication and originally was offered as a possible etiologic factor in symptom production. Specific cranial nerve (except II), sensory, or cerebellar signs have not been described.

The non-neurologic signs and symptoms of carbon dioxide intoxication are predominantly cardiopulmonary. Respiratory depression is evident; cyanosis is always present when the patient is breathing room air. Tachycardia is frequent.

Pathophysiology. Carbon dioxide retention and arterial anoxia provide direct evidence of abnormal pulmonary physiology, inadequate gas exchange, and ineffective compensation. Respiratory acidosis is the biochemical result of carbon dioxide retention. Metabolic compensation occurs by way of the whole body buffers, renal secretion of acid urine, ammonia excretion, and increased tubular resorption of bicarbonate. Uncompensated respiratory acidosis exists chronically when pulmonary function is unable to maintain the concentration of carbonic acid at a level below the maximum "acid-accepting capacity" or it exists acutely when pulmonary ventilation fails.

Ventilation is regulated centrally and peripherally in a manner whereby respiratory depression is counteracted by the resultant stimulant effect of increased $p\text{CO}_2$, increased hydrogen ion concentration, and decreased $p\text{O}_2$. These three mechanisms act jointly in producing compensatory hyperventilation seen in certain patients with chronic pulmonary disease, but are obviously ineffective in those patients who hypoventilate in the face of abnormal blood gases and diminished pH.

Patients with emphysema exhibit a diminished respiratory response to inhalation of carbon dioxide. It is now the general feeling that, although abnormal respiratory mechanics may play a role, the prime factor is an actual refractoriness of the medullary center to increases in $p\text{CO}_2$.

Chemoreceptor regulation becomes increasingly important as the respiratory response to hypercapnia diminishes. Anoxia often becomes the primary respiratory stimulant and any effort to correct the low blood oxygen results in severe depression of respiration, hypercapnia, and acidosis. The injudicious use of oxygen in patients with chronic pulmonary disease is an event of prime clinical importance in precipitation of carbon dioxide intoxication.

In the majority of reported cases, carbon dioxide intoxication developed during hospitalization. This finding amplifies the importance of careful management—particularly after institution of oxygen therapy. The physician must specify the exact concentration, route, flow rate, and administration time; and every time when oxygen is to be administered to a new patient with chronic pulmonary disease, he must be in attendance during the critical first 15 to 30 minutes of administration. The most worthy candidates for oxygen therapy are the greatest risks for oxygen-induced respiratory depression. Narcotic and sedative drugs can act individually or in combination with other factors to precipitate carbon dioxide intoxication.

There is no unity of opinion regarding the relative roles of hypercapnia and acidosis in production of carbon dioxide intoxication. There is no evidence which definitely points to one of these factors as the prime etiologic agent.

Diagnosis. Arterial pH and $p\text{CO}_2$ constitute the evidence upon which the diagnosis of carbon dioxide intoxication is ultimately based. For practical purposes, determination of the former is all that is necessary. No definite levels have been set as diagnostic—the wide range of values and large overlap between these values and the level of consciousness probably result from variation in individual susceptibility and rate of symptom development.

Patient response to a "test dose" of oxygen is a simple diagnostic procedure. Deepening narcosis, secondary to oxygen administration, is good evidence in favor of the syndrome.

Cerebral vascular disorders merit primary consideration in differential diagnosis of this syndrome. Diabetic acidosis, electrolyte disturbance, hepatic coma, and uremia must be ruled out. Central system trauma and primary toxic effects of alcohol or drugs must be added to the list of diagnostic possibilities.

A careful history and physical examination are fundamental to the diagnosis of carbon dioxide intoxication. Special reference must be made to the neurologic examination—particularly to the presence or absence of localizing signs, and the character of the spinal fluid. (R. J. O'Reilly, The Clinical Recognition of Carbon Dioxide Intoxication: Dis. Chest, XXXVII: 185-192, February 1960)

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Oxygen Therapy

Oxygen therapy is one of the most frequently used forms of medical therapy. However, the manner in which oxygen should be used and the general acceptance of principles of oxygen therapy have not received the attention they should.

Purposes. The statement that oxygen is administered to provide sufficient oxygen for the body's need is an entirely inadequate description of the purpose of oxygen therapy. A group of patients in whom oxygen therapy is needed can be separated on the grounds of localized hypoxia—as in the heart or brain—from a group of patients in whom the problem is that of diminished arterial saturation.

The mechanism responsible for transfer of oxygen from blood to the tissues is the difference between the tension of oxygen in the blood stream and the tension of oxygen in the tissues. Oxygen will pass rapidly from the blood stream to the tissues until equilibrium or near equilibrium is reached.

When one thinks of the oxygen demand of tissues, one must think not only of oxygen saturation but also of oxygen tension, the sharp slope of the oxyhemoglobin dissociation curve, velocity of the blood flow through an organ, and concentration of hemoglobin. In cases in which the concentration of hemoglobin is adequate, hypoxia may be produced in two ways.

1. By failure of the transfer of oxygen from the air to the blood at an adequate rate.

2. By failure of the transfer of oxygen from the lungs to the tissues at an adequate rate which leads to marked desaturation at the end of tissue capillaries. This may be associated with a low cardiac output or with increased utilization of oxygen.

If hypoxia is associated with an adequate excretion of carbon dioxide or even respiratory alkalosis, it brings up consideration of oxygen therapy as a means of diminishing the work of breathing, the work of the heart, or both.

Percentage of Oxygen to be Administered. Although administration of 100% oxygen for a short time may be advantageous in certain cases, its administration for a long time has a deleterious effect on the patient. The chief deleterious effects include irritation of the surface cells of the trachea

and bronchi, and swelling of the mucous membrane of the alveoli. In addition, supersaturation with oxygen impedes excretion of carbon dioxide from the tissues into the capillaries. It might also be added that because oxygen is absorbed easily it may cause patchy atelectasis due to irritation and accumulation of mucus.

Maximal supersaturation of blood by the use of 100% oxygen is indicated in cases in which blood flow is inadequate to tissues that are incapable of anaerobic metabolism. A well-fitting mask should be used, and the oxygen can be supplied by high flow into a reservoir or by a demand valve. The use of rebreathing equipment is contraindicated not only because of the accumulation of carbon dioxide in damaged areas, but also because very high oxygen tension inhibits general transportation of carbon dioxide back to the lungs. Mixtures of oxygen and carbon dioxide have no place in the treatment of these conditions.

The inadequate forms of oxygen therapy which are frequently used are in direct contrast to supersaturation of the blood by the administration of 100% oxygen. Methods of oxygen therapy which generally are considered adequate will furnish between 35 and 65% of oxygen to the inspired air, which is usually sufficient to increase the oxygen saturation of the arterial blood. This will reduce the work of ventilation, and consequently will improve the condition of the patient. It likewise will permit a lower blood flow to the tissues which will either relieve the demand on the heart or will permit it to operate near the limits of its reserve.

Apparatus for administering oxygen in open circuit ranges from the popular nasopharyngeal catheter to special face masks—with or without oxygen diluters—to the oxygen tent. When any of these types of equipment are used, an adequate flow of oxygen is essential. This requirement may be roughly calculated so that 35 to 65% of oxygen is delivered.

If oxygen is administered by the conventional method in a case of dyspnea, a comparatively large amount will be needed when the administration is started, and the amount may be decreased as the patient improves.

It is in cases of dyspnea that the disadvantages of the conventional oxygen tent become most apparent because a stable oxygen content of inspired air is obtained throughout therapy, and a relatively high flow of oxygen is necessary to prevent accumulation of carbon dioxide. Owing to leakage and other factors, the effectiveness of oxygen tents is far less than is generally believed.

Additives to Oxygen. The drying effect of breathing oxygen, and of hyperventilation must not be overlooked. The resultant dehydration may cause mucous secretion to become more viscous and sticky, and thus it may cause plugging of the bronchi. Dehydration also may cause desquamation of the epithelium.

Ordinary methods of humidification are insufficient to replace the moisture lost. It is clear that the day of the conventional humidifier is past,

and that humidifying nebulizers—particularly those of the heated type—are the devices of choice for administration of oxygen for general purposes.

Humidification also must be considered when other types of medication are being used. Otherwise, it is likely that some of a medicament capable of getting into the lower part of the respiratory tree will be evaporated and that small particles will be applied to only one particular point. Naturally, this is of particular importance in administration of substances that can be destroyed by drying. Also, it should be considered when such substances as wetting agents and enzymes are applied.

The special problem of oxygen in instances of emphysema is described. In these cases, mechanical or pharmacologic hyperventilation to combat accumulation of carbon dioxide is advised. (R. H. L. Wilson, S. M. Farber, Concepts and Misconceptions About Oxygen Therapy: Postgrad. Med., 27: 158-164, February 1960)

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A MEMORIAL

Rear Admiral Winchell McKendree Craig

At the funeral service of Rear Admiral Winchell McKendree Craig, Medical Corps, United States Naval Reserve, Retired, held at the Arlington National Cemetery on 23 February 1960, Rear Admiral Robert J. White, Chaplain Corps, United States Naval Reserve, Retired, delivered a short memorial to the gentleman, physician, and Naval officer who contributed so much to the Navy Medical Department. For those who were unable to attend the service, as well as for those who did, these moving words of tribute by Chaplain White are repeated.

"Our sad farewell to a friend whom we held in such deep respect and abiding affection would be incomplete unless in your name, I expressed to his wife and to his children our deepest sympathy. The influence of a man upon his family and their influence upon him combine to fashion the character of that man. Thus, dear Jean, you and your children justly share his honors.

Admiral Craig—devoted husband and father and brilliant physician and surgeon—was a sturdy American patriot in time of peace and of war. He understood the mission of, and took pride in the ideals of, the United States Navy. For over two decades his remarkable professional skill enriched in war and in peace the proud traditions of the United States Navy Medical Corps.

His dedication to his profession truly reflected the deep spirituality of a vocation which became a ministry. For through the years, he brought light to those in the dark shadows of illness, hope to the hopeless, and renewed in all his patients courage and faith in the love and healing power of God.

We who knew him so well can testify that he was in every respect the true Navy Officer and gentleman. Through the years we saw him treating an apprentice seaman or Marine private with equal professional concern as admirals, members of Congress, cabinet officers, and noted world figures who came from afar for his medical and surgical care.

His life, brilliant and successful, is a lasting inspiration and guide to young medical students. For with him, they came to know and to appreciate the reality and sterling worth of great professional talents when combined with untiring zeal, personal humility, comprehensive human understanding, and unfailing kindness to every one.

All of these great qualities of character have more than transient worth. Indeed, they mirror and in a sense prove the immortality of the spirit under God.

Truly, those men do not die who bequeath in life—as he did—their learning, their skills and techniques, and above all, their ideals to their disciples of younger generations.

With sorrow, we say 'Farewell.' But with confidence and faith in the Easter promise of immortality, we entrust our dear friend to the keeping of our Eternal Father. For surely the reward of such a life and consecration must be the dwelling—which 'eye hath not seen, nor ear heard, nor the mind of man conceived'—that God has prepared for those who have walked in His law and in His Love.

May God grant you, dear friend, peace and rest. May His eternal light shine upon you forever. Amen. "

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MSC Officer Assignments Centralized

Rear Admiral B. W. Hogan, Surgeon General of the Navy, has approved a transfer from the Dental Division to the Medical Service Corps Division of BuMed's personnel management function regarding Medical Service Corps officers assigned to dental activities. As a result of this change, all officers

of the Medical Service Corps will be provided with common career guidance, broadened opportunity, and career patterns permitting a greater variety of assignments. These effects can result in improvement of each officer's qualifications for promotion, particularly to higher grades.

In the past, matters regarding assignment and training of Medical Service Corps officers assigned to dental activities have been initiated by the Dental Division. Files of these officers, formerly held by the Dental Division, now will be transferred to the Medical Service Corps Division, and continuing liaison between the two divisions will be maintained.

All officers of the Supply and Administration Section, Medical Service Corps, will be available for rotation to assignments in dental activities at various stages in their careers. Preference for such type of duty may be registered on the Officer Preference and History Supplement Card (NavPers 765A). Medical Service Corps officers currently assigned to dental activities will be considered for reassignment, although it is not planned that current tours will be prematurely interrupted for such purpose. Officers above the grade of Lieutenant, now serving in dental activities, will be offered the option of continuing their careers in dental administration since some may feel it unwise to adapt to other types of duty at such a relatively late time in their careers.

Management functions regarding Dental Service Warrant officers will continue as a responsibility of the Dental Division.

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Four Months' Course in Psychiatry

A four months' intensive course in psychiatry will be offered for Medical officers at the U. S. Naval Hospital, National Naval Medical Center, Bethesda, Md., starting 31 July 1960 and finishing 1 December 1960. The course will include didactic and practical instruction in basic clinical psychiatry, military and administrative psychiatry, psychotherapy, psychiatric diagnosis, interview techniques, and principals of psychotherapy. Instruction will be provided by hospital staff members and selected civilian specialists. Each Medical officer who successfully completes this course will be assigned for at least the following 20 months to a psychiatric billet in a naval facility under an experienced psychiatrist. Applicants must, therefore, have at least approximately 24 months of obligated service at the start of the course. There is no additional obligated time for the course of instruction. Interested applicants should submit requests to the Chief, Bureau of Medicine and Surgery no later than 1 May 1960.

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American Board of Obstetrics
and Gynecology Examinations

Applications for certification in the American Board of Obstetrics and Gynecology, new and reopened, Part I, and requests for reexamination in Part II are now being accepted. All candidates are urged to make such applications at the earliest possible date. Deadline for receipt of applications is 1 August 1960. No applications can be accepted after that date.

As announced in the current Bulletin, "after 1 July 1962, this Board will require a minimum of three (3) years of approved progressive Residency Training to fulfill the requirements for admission to examination. After the above date, training by Preceptorship will no longer be acceptable. Therefore, the initiation of Preceptorships will not be approved after 1 July 1960."

Present requirements are presented in the current Bulletin of the Board, which may be obtained from the Office of the Secretary, Robert L. Faulkner, M.D., 2105 Adelbert Road, Cleveland 6, Ohio.

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New Films - Chemical Warfare Defense Series

New films in the series, "Medical Defense Against Chemical Warfare," (MN-8266) are now available. Part E, "Principles of First Aid," (black and white, 20 min.), is primarily for hospital corpsmen, but may be used for instruction of all hands. The film depicts troops in a phase of amphibious assault subjected to an artillery barrage—including chemical agents—and demonstrates a system of priorities in giving first aid. It specifically covers use of atropine and control of breathing; control of traumatic copious bleeding associated with chemical contamination; decontamination of eyes and skin; and administration of atropine to casualties with delayed or recurrent symptoms. Part F, "Emergency Treatment," (color, 20 min.), is primarily for Medical officers, but suitable for others, and presents the principal types of emergency to be expected in case of chemical attack, including emergency treatment of severe exposure to vesicants; and demonstrates procedures that may be used in management of anoxia produced by nerve gases.

Parts A through D of this series, previously released, are: "Basic Plan for Handling Casualties," "Detection of Contaminated Water," "Detection of Contaminated Food," and "Gas Attack Self-Aid."

Prints are being distributed to District Libraries, Naval Hospitals and Hospital Corps Schools, the Field Medical Service Schools at Camps Lejeune and Pendleton, Marine Corps Training Aids Libraries, and the Environmental Sanitation School. If prints are not available through the usual source, address inquiry to the Film Distribution Unit, Training Division, Bureau of Naval Personnel, Department of the Navy, Washington 25, D. C.

BUMED INSTRUCTION 6530. 1B

4 March 1960

Subj: Blood; procurement of and minimum requirements for

This instruction promulgates policy regarding procurement of blood for persons under treatment in Navy medical facilities, and for scientific and research purposes. The objective is to insure that blood will be available of the quality desired, in the quantity required, and in the most economical manner practicable to meet the needs of the Navy Medical Department.

BUMED INSTRUCTION 6530. 6

4 March 1960

Subj: Whole blood transfusions

The purpose of this instruction is to stress the importance of recognizing the possible potential dangers of blood transfusions, and to insure that every possible precaution to prevent any error has been undertaken. Because every anticipated blood transfusion must be considered as having the possibility of producing a fatal transfusion reaction, there are minimal procedural requirements which must be followed.

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From the Note Book

Medical Aspects of Special Weapons, a symposium beginning 14 March 1960, sponsored by the U.S. Naval Medical School, NNMC, Bethesda, Md., was attended by approximately 300 Reserve officers of the U.S. Army, Navy, Air Force, and Public Health Service. This was the 29th presentation of the course which has been attended by approximately 3500 officers since its beginning in 1948. Originally limited to one week, the latest symposium was the 12th of the series of sessions which was extended to two weeks in 1953. Coordinated by CAPT J. S. Shaver MC USN, Acting Commanding Officer of the School, sessions were devoted to Medical Aspects of Special Weapons and Radioactive Isotopes with particular reference to personnel casualties from atomic explosions, other professional topics of concern to military medicine, and discussions of Reserve Medical programs of the Armed Forces. (News Release, NNMC)

Thermal Factors in Environment. The Subcommittee of the National Research Council of the National Academy of Sciences concerned with this subject met at the Naval Medical Field Research Laboratory, Camp Lejeune, N. C. on 19 - 20 February 1960, to discuss heat stress data collected by the laboratory. In addition, plans for construction of a climatic chamber and auxiliary equipment at NMFRL were presented for evaluation and recommendations.

Blood Groups and Human Genetics is the title of the Gibson Lecture to be presented at the College of Physicians and Surgeons, Columbia University, 630 W. 168th St., New York 32, N. Y., 4:30 p. m., 28 April 1960. The lecture will be given by R. R. Race, Ph. D (Oxford) MRCS, FRS, of the Medical Research Council, Great Britain, and of the Lister Institute for Preventive Medicine. It is open to all medical personnel and should be of considerable interest to all who order transfusions or are connected with blood banks.

Clinical Pharmacology and Therapeutics is a new journal, the official publication of the American Therapeutic Society under the editorship of Walter Modell. The first issue was the January - February number and promises to be a valuable addition to the ever growing list of professional journals.

World Neurology, the official journal of the World Federation of Neurology, is planned for publication in July 1960. This journal will make it possible for members of national neurologic societies to be up-to-date constantly on the development of neurologic research in all member countries. It will open lines of communication between individual scientists and point to new avenues of research through which they may collaborate.

The Problem of Accidental Poisoning in the Home, the title of a series of color slides and related script prepared by Wyeth Laboratories, is available for payment of return postage. Distributed by the American Pharmaceutical Association, requests for loan of the films (which should state whether individual aluminum slide mounts or Airequipt slide magazine are desired) are to be directed to the association, Division of Communications, 2215 Constitution Ave., Washington, D. C. (Washington Report on the Medical Sciences, March 14, 1960)

Shoulder-Hand Syndrome. The principal approach to this problem is prophylactic treatment of the syndrome following acute myocardial infarction or anginal attack. The arms should be actively put through the entire range of motion—particularly the shoulder joint—when shock and the effect of narcotics have waned. After pain has developed, active motion helps overcome splinting, atrophy, and osteoporosis, and may overcome lymphatic and venous stasis. Concomitant use of cortisone lessens pain and spasm. (I. Eskwith, Postgrad, Med., December 1959)

Stored Skin Homografts. An 8-year study employing split-thickness skin homografts—stored in nutrient media, glycerin-frozen, and freeze-dried—indicates that the freeze-dried method offers the most significant advantages, including storage at room temperature, usability after 5 or more years, and ease of shipment. (LT J. M. Young MC USN, CAPT G. W. Hyatt MC USN, A. M. A. Arch. Surg., February 1960)

Hydrochlorothiazide. Clinical and pharmacologic experiences with hydrochlorothiazide reveal no significant effect upon renal plasma flow, but a transient decrease in glomerular filtration rate. The authors assume that it acts at the renal tubular level. Its effect was demonstrated to begin within one hour and to persist for 12 or more hours. Studies on edematous cardiac patients showed an optimum response to 200 mg. daily. (M. Fuchs, et al., A.M.A. Arch. Int. Med., January 1960)

Isobutamide in Heart Failure. Continuous administration of isobutamide, a carbonic anhydrase inhibitor, maintained a group of cardiac patients free of edema with sustained weight loss. It would appear that weight loss maintained was slightly more than that produced by a similar dose of acetazolamide, although increases in sodium and water excretion are comparable. (M. Fuchs, et al., Dis. Chest, January 1960)

Potent New Diuretic. Be. 724-A, newest analogue in the benzothiadiazine family, shows a significantly increased natruresis and decreased loss of potassium and bicarbonate. It is effective upon continuous administration, and causes no significant serum biochemical changes. It more closely approaches a natural or "ideal diuretic." (R. Ford, J. Nickell, Am. Heart J., February 1960)

Phenylketonuria. The authors report 21 cases of phenylketonuria. Most of the patients were severely retarded, only a few could speak, and there was no one personality or behavioral pattern which could be said to characterize the group. They state that while low phenylalanine diets appear promising as a means of treatment for cases discovered relatively shortly after birth, more research is needed to evaluate the long-term effectiveness of such treatment. (S. Garfield, M. Carver, J. Nerv. & Ment. Dis., February 1960)

Antipenicillinase Serum. A penicillin destroying agent produced by certain bacteria—penicillinase—has been identified; and, production by rabbits of an antibody to this enzyme has been demonstrated. It has been proposed that inactivation of penicillinase in the human body may not be an insurmountable task and would be of particular value in treating penicillin resistant organisms. The authors report experiments along this line, employing laboratory animals, with encouraging results. (W. Wick, et al., Antibiotics & Chemother., February 1960)

Gastric Antrum. Gastroenterology for January 1960 presents a symposium on the function of the pyloric gland area of the stomach and its role in peptic ulcer disease.

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DENTAL**SECTION**Mouth-to-Mouth Resuscitation Pocket Cards

The Dental Division, Bureau of Medicine and Surgery, recently completed distribution to all Navy Dental personnel of a pocket card illustrating the mouth-to-mouth method of resuscitation.

This method of resuscitation is currently recommended as the preferred and most effective method of providing artificial respiration.

The manual methods (back-pressure arm-lift, back-pressure hip-lift, Eve method, Schaefer method) will be taught as alternate methods for use when mouth-to-mouth resuscitation is not possible.

<p style="text-align: center;">RESCUE BREATHING <u>Mouth-to-Mouth Resuscitation</u></p> <ol style="list-style-type: none"> 1. Place patient on back 2. Clear mouth of debris 3. Thrust head backward 4. Lift tongue and jaw 5. Pinch nostrils 6. Seal your mouth over patient's mouth 7. Blow until chest lifts 8. Remove mouth and listen for breathing 9. Blow again and repeat 10-15 times per minute, as necessary 	<p style="text-align: right; writing-mode: vertical-rl; transform: rotate(180deg);">PREPARED & DISTRIBUTED BY THE U.S. NAVY DENTAL CORPS</p>
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Effectiveness of Fluoridation

Fluoridation of community water supplies is the most effective and economical health measure in reducing incidence of dental caries. This conclusion is contained in a report on the recently completed 10-year Dental Demonstration of Askov, Minn. The project was designed to show benefits that could be obtained for school and preschool children through a community dental health program. The report continues that topical fluoride treatment should be considered where fluoridation does not exist.

Fluoridation was one of five "efforts" found in the study to be essential to good dental health. The other four are: a sound dental health education program; regular dental examinations and corrective services; timely and proper mouth hygiene; and, control of the intake of sweets. The report further notes that a community dental health program is effective only to the extent that the educational phase motivates the individual to apply and practice knowledge acquired. Final report of the Askov study appeared in the November issue of North-West Dentistry, published bimonthly by the Minnesota State Dental Association.

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Malpractice Suits

The question of malpractice suits against Navy Dental officers arises periodically. The subject is covered in the Manual of the Medical Department, articles 3-29 and 6-36. Some salient facts not covered in the manual are:

1. The Dental officer may be sued alone or in conjunction with the Federal Government.
2. Malpractice suits against an officer may include his commanding officer (U.S. Naval Dental Clinics), senior dental officer, or chief of dental service even though they have no part in the treatment.
3. The Federal Tort Claims Act does not constitute a protective umbrella for the Navy Dental officer.
4. The Federal Government does not, of necessity, have to provide counsel.

The purchase of malpractice insurance is a matter of personal concern to the individual Dental officer. The Armed Forces Medical Journal of February 1958 (Page 224) contains an excellent discussion of this subject.

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Dental Care - 1959

During calendar year 1959, some 7,338,000 dental procedures were performed in Navy dental facilities. A breakdown of procedures reveals that there were approximately 3,086,000 operative crown and bridge procedures, 83,000 prosthodontic procedures, 382,000 oral surgery procedures, and 603,186 periodontic procedures. Approximately 1,547,000 radiographs were taken, and 1,636,000 dental examinations and postoperative treatments given.

Of the total number of dental procedures rendered, 6,664,000 were performed for Navy and Marine Corps personnel, 77,574 were for Army and Air Force personnel, and 437,000 for military dependents.

During calendar year 1959, the Dental Corps operated with 4 percent fewer dental officers. During this period, 1.8 percent fewer total procedures were accomplished. This reflects a total gain in procedures of 2.2 percent compared to calendar year 1958. Increase in procedures was shown in operative crown and bridge, prosthodontics, and periodontics; decrease appeared in oral surgery and x-rays, examinations, and postoperative treatments.

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Course in Oral Surgery

A short postgraduate Course in Oral Surgery, a part of the Navy Dental Corps Continuous Training Program, will be presented at the U. S. Naval Dental School, National Naval Medical Center, Bethesda, Md., 11 through 15 April 1960. CAPT D. E. Cooksey DC USN, Diplomate, American Board of Oral Surgery will be instructor.

This course will consist of seminars, lectures, and demonstrations. It is intended to cover treatment of facial fractures and other oral surgical procedures, local and general anesthesia, premedication, principles of exodontia, and biopsy techniques. Emphasis will be placed on preoperative evaluations for minimal postoperative complications.

Quotas have been assigned to: 1st, 3rd, 5th, 6th, and 9th Naval Districts; Potomac River and Severn River Naval Commands; and the Naval Air Reserve Training Center.

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Personnel and Professional Notes

RADM Schantz Visits Scott Air Force Base. Rear Admiral C. W. Schantz, Assistant Chief of the Bureau of Medicine and Surgery for Dentistry, and Chief, Dental Division, with the other members of the Department of Defense

Dental Advisory Committee recently visited Scott Air Force Base, Ill. The visit which included a tour of the Family Dental Clinic was followed by a conference and Executive Session of the Dental Advisory Committee. Among the agenda items discussed were the Status Report on Federal Dental Scholarships, and Consideration of a Request for Designation of the U. S. Naval Auxiliary Air Station, Fallon, Nev., as "remote" area.

CAPT Frechette Presents Lecture. CAPT A. R. Frechette, Deputy Chief, Dental Division, Bureau of Medicine and Surgery, recently presented a lecture before the Denver Prosthetic Club. The lecture—Improved Partial Dentures— was presented to two different groups during the afternoon and evening of 16 February 1960 at the Denver Athletic Club.

CAPT Wais Presents Clinic. CAPT F. T. Wais DC USN, U. S. Naval Air Station, Pensacola, Fla., recently presented a clinic at the Central (4th) District Dental Society at Jackson, Miss. The clinic—entitled The Practical Approach to Endodontics for the General Practitioner—encompassed methods of proper diagnosis; sound treatment planning; use of different medicaments; gutta percha root canal points and silver root canal cylinders; the sensible handling of periapical pathosis; the placing of the proper type of restorations following successfully completed endodontic treatments; and a bleaching technique to restore the esthetics of discolored nonvital teeth. Numerous kodachrome slides and periapical x-rays were included in the presentation.

CAPT Allen Admitted to Royal Society. CAPT Clifford E. Allen DC USN, Fleet and Force Dental Officer, U. S. Atlantic Fleet, having fulfilled the conditions for membership required by the Council of the Royal Society of Health, London, was admitted as a member in this Society on 10 November 1959, and is entitled to use the designation M. R. S. H.

Southern California State Dental Society. The President of the Southern California State Dental Association extended a special invitation to all Navy Dental officers in the 11th Naval District to attend their Sixty-Third Annual meeting to be held 2, 3, and 4 May 1960 at the Biltmore Hotel, Los Angeles, Calif. Membership in the American Dental Association is mandatory for admission. Those who are not members may join the Association by paying their dues upon registration. All Dental officers should register at the Guest Section of the registration desk in the Galeria of the Biltmore Hotel.

CAPT Towle Visits Royal Canadian Dental Corps School. CAPT H. J. Towle Jr. DC USN, Head of the Audio-Visual Department and of the Maxillo-Facial Prosthetics Division of the U. S. Naval Dental School, spent the week of 1 to 5 February 1960 at the Royal Canadian Dental Corps School, Camp Borden, Ontario, Canada where he assisted in establishing a course in casualty care

training for Dental officers of the Royal Canadian Dental Corps. CAPT Towle was impressed with the new ultra modern building in which the Canadian Dental Corps School is located. The School, under the direction of Colonel B. P. Kearney, Commandant, uses both casualty care training equipment and course material developed by the U. S. Naval Dental School, including a replica of Mr. Disaster, the life-size manikin created to demonstrate care of the wounded. Brigadier K. M. Baird, Director General of Dental Services, Department of National Defense, Ottawa, visited the School during the course and observed some of the demonstrations.

Accomplishments in Naval Dental Clinic, Washington, D. C. The U. S. Naval Dental Clinic, Washington, D. C. ended the year 1959 with an advancement in rating percentage of 47 percent. As of 15 February 1960, the following educational accomplishments were reported:

	Officer	Enlisted
Enlisted Correspondence Course Enrollment	0	28
Officer Correspondence Course Enrollment	9	5
Outservice Training	3	1
GED Tests	0	3
USAFI Correspondence Courses	0	2

The above totals represent a 100 percent enlisted and 50 percent officer participation in educational courses. The command provides, in addition to its regular inservice training, a weekly study group—on a voluntary basis—for personnel in pay grade E-5 and above (also lower rated personnel who are career motivated).

Under the guidance of the personnel officer, this provides an opportunity for personnel to become familiarized with administrative, clerical, and fiscal procedures; and the regulatory publications and changes thereto. It also allows for its participants to suggest topics for future study in the above or related fields. The high morale and educational pursuit of the personnel of the Naval Dental Clinic is reflected not only by its advancement percentage, but also in that no single case of disciplinary action was recorded in 1959. The U. S. Naval Dental Clinic is under the command of CAPT J. L. Wanger DC USN.

Your Career in the U. S. Navy Dental Corps. The Dental Division, Bureau of Medicine and Surgery, is in the process of distributing a new booklet—Your Career in the United States Navy Dental Corps (NRAF 29502)—intended to help answer the questions of prospective career Dental officers.

Major considerations to be weighed when choosing a career are discussed under the headings: Professional Development, Personal Factors, and Financial Security.

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RESERVE**SECTION**Aerospace Medical Association Meeting

The Aerospace Medical Association will conduct its annual scientific meeting in Bal Harbour, Miami Beach, Fla., 9 - 11 May 1960. The scientific program for the meeting will include three full days of sessions on subjects related to the practice of aviation medicine, research and education, and development, testing, and operational applications.

Membership of the association is composed of Regular and Reserve officers of the U.S. Armed Services, civilian specialists in aviation medicine, and civilian medical specialists of foreign nations.

Eligible inactive Naval Reserve Medical Department officers may earn one retirement point credit for attendance at each day's sessions under the sponsorship of the military, provided they register their presence with the authorized military representative. A maximum of three retirement points is authorized per eligible officer.

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Congress of American Optometric Association

The American Optometric Association will conduct its annual Congress at the Biltmore Hotel, Atlanta, Ga., 26 - 29 June 1960.

The military program lists four individual sessions devoted to subjects in military optometry, each of at least 2 hours duration. They will be under the sponsorship of officers of the military services. Attendance at these sessions affords an excellent opportunity for inactive Reserve Medical Department officers to be brought up to date on latest developments in the field of military optometry.

Eligible inactive Reserve Medical Department officers may be credited with retirement points, provided they register their attendance with the military representative present.

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Quadrennial Physical Examinations

When not on active duty, all members of the Naval Reserve, except the Retired Reserve, shall be examined physically at least once during each

4-year period. Such 4-year period will be considered as commencing on the day following the date upon which a physical examination reported on Standard Form 88 was conducted. The examination is based on standards prescribed in Article H-31003, Bureau of Naval Personnel Manual, and is to be conducted by Medical officers of the Regular Navy or Naval Reserve, utilizing Naval Reserve Medical officers not on active duty to the maximum degree.

In determining physical qualifications for active duty, due consideration shall be given to the character of the duty to which the member may be assigned in the event he should be ordered to active duty pursuant to law. Disposition of those Reservists found not physically qualified for retention in the service will be in accordance with current directives.

Commanding officers of units holding medical records of Reservists, commandants of naval districts and river commands for all other Reservists under their jurisdiction, the Chief of Naval Air Reserve Training, and appropriate area or force commanders, will be responsible for the notification to members of the Naval Reserve under their jurisdiction when such members become due for their next quadrennial physical examination. Such members shall be notified at least 60 days in advance of the dates on which they will become due for the quadrennial physical examination. Disposition of those Reservists who fail to appear for this physical examination within 30 days following the date on which they become due therefor and who have been so notified will be as determined by the Chief of Naval Personnel. (Article H-31002 BUPERS Manual)

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Reserve Units to be Activated

The Chief of Naval Personnel recently authorized activation of Hospital Corps Division 12-2 which plans to conduct multiple drills at the U. S. Naval and Marine Corps Reserve Training Center, Fort Douglas, Salt Lake City, Utah.

This new division currently has 5 officers and 37 enlisted personnel and will utilize the facilities of the above training center, along with instructional material outlined in curriculum rate training manuals.

Membership in this unit is available to enlisted hospital corpsmen of the Naval Reserve. Interested eligible individuals should communicate with LT John S. Darden MC USNR at the above address or write to the District Medical Officer, Headquarters, Twelfth Naval District, Federal Office Building, San Francisco 2, Calif.

Authorization to activate Medical Specialist Unit 11-2, Phoenix, Ariz., on 6 April 1960, was granted to the Commandant, Eleventh Naval District by the Chief of Naval Personnel under authority letter dated 7 March 1960.

This non-pay unit will conduct its drills on the first and third Wednesdays of each month at the U. S. Naval and Marine Corps Reserve Training Center, 2042 West Thomas Road, Phoenix, Ariz.

Present membership consists of Reserve Medical and Dental Corps officers in the Phoenix area. Interested eligible Reserve officers desiring membership should communicate with LCDR William E. Crisp MC USNR, Commanding Officer at the above address, or write to the District Medical Officer, Eleventh Naval District, 937 North Harbor Drive, San Diego 30, Calif.

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PREVENTIVE MEDICINE

Changing Emphasis in Chest Film Survey Procedures

The many changes in the practice of medicine which have taken place in the two decades since the initial development and advocated use of chest survey procedures have resulted in changing areas of emphasis in their application, the definition of their objectives, and the prospective candidates to whom they should be applied. The most significant as reflected in these changes in emphasis might be listed as follows:

1. The declining mortality rates and, in some areas, the declining incidence of active pulmonary tuberculosis.
2. The increasing incidence of bronchial neoplasm, together with a growing appreciation of the natural history of bronchial carcinoma and its early roentgenologic signs.
3. The technical advances in thoracic surgery, enabling more prompt and thorough investigation of mediastinal and parenchymal neoplasm or lesions in which neoplasm cannot otherwise be excluded.
4. The technical advances in diagnostic procedures, anesthesia, and methods of cardiac surgery which call for prompt recognition of cardiovascular lesions amenable to therapy.
5. The realization by industry of the importance of adequate pre-employment baseline studies, both from the standpoint of the worker's health and to protect industry against unjust compensation claims.

6. The recognition of the statistical validity of studies relating to the fallibility of interpretation of survey films by a single reader.

7. The now receding wave of public hysteria concerning exposure to radiation and the extended education of medical personnel concerning radiation precautions.

Tuberculosis. At the time of their inception and early application, chest survey procedures were justified almost entirely as a means of tuberculosis case finding. The yield of surveys of the general population, of persons admitted to hospitals, and of occupational groups was sufficient to justify this emphasis. The hospital registration survey in particular was justly advocated as a major step in the protection of hospital personnel from unrecognized active tuberculosis and in enabling more prompt recognition of the necessity for therapy.

The general public has an exaggerated view of the progress that has been made toward elimination of this disease as a public health problem. Actually, the decreasing incidence of the disease presents a challenge to develop more efficient survey methods to find the remaining cases so that these persons too may have the advantages of modern chemotherapeutic and surgical methods.

The growing number of older persons in our population has emphasized the urgency of adequate coverage of these persons as the trend in tuberculosis from a disease of younger people to a disease of old age has been recognized. The tendency of latent tuberculosis to become active in older persons with the stress of other degenerative and debilitating disease must be constantly kept in mind.

Solely from the standpoint of tuberculosis case finding, then, the following emphasis in survey procedures seems justified.

1. The decreasing incidence of tuberculosis increases the effectiveness of the tuberculin skin test as a diagnostic tool, and this, rather than chest filming, should be utilized in grade school and high school populations. Chest filming should be reserved for positive reactors to skin testing.

2. While it appears that the incidence of active tuberculosis among persons admitted to hospitals is decreasing, prompt detection of the active cases by survey procedures remains a prime consideration both to protect hospital personnel and because of the many advantages of early recognition and therapy.

3. Surveys of the general population are far less efficient as tuberculosis case-finding procedures.

4. It is increasingly urgent to survey the aging segments of the population, both to institute prompt therapy and to obliterate a reservoir for transmission of the disease.

Intrathoracic Neoplasm. One of the frustrating paradoxes of current medical practice lies in the increasing incidence of bronchial neoplasm and

the inability of thoracic surgeons, chemotherapists, and radiologists to effect a satisfactory percentage of cures in spite of many recent technical advances in these fields. Considerable pessimism has been expressed concerning the wisdom of extensive chest surveying for this lesion when so little in the way of tangible long-term results can be achieved. It seems probable that biologic behavior of the neoplasm influences the eventual survival period more than does promptness of roentgenologic recognition. There are, however, some data to indicate that asymptomatic lesions detected incidentally in survey films do have a better prognosis than do lesions discovered otherwise. Regardless of the facets of biologic predeterminism implied in tumors so discovered, it seems reasonable that their prompt removal will contribute to an improvement in the eventual cure rates, although the more aggressive symptomatic lesions may continue to be difficult to manage. Many of the asymptomatic lesions have spread beyond control.

Thanks to the emphatic teaching of Rigler and others, the earliest roentgenologic signs of bronchial neoplasm are more widely understood, and it is toward this early recognition that future survey filming must be aimed. Both localized parenchymal lesions and early disturbances in bronchial dynamics must be recognized in more subtle manifestations and with a higher index of suspicion. Men over 40 years of age must be subjected to more intensive survey procedures than other groups. To accomplish this, it is currently being proposed at The University of Michigan Medical Center that the admission survey chest filming be extended for men over 40 to include, in addition to a frontal 70 mm. photofluorogram, a lateral view in inspiration and a frontal view in expiration. It is thus hoped that recognition of the earliest roentgenologic signs will increase and, in any event, data for the statistical evaluation of the effectiveness of this extension will be gathered.

In situations where men in this age group are fairly stable and available for continued observation, such as in industry, in the armed services, and in veterans' hospitals, aggressive extension of periodic examinations will provide for large-scale evaluation of the possible increase in cure rate which may result.

While bronchial neoplasm is the most urgent problem of neoplasm in relation to chest survey filming, we must not overlook the importance of other neoplasms. Recognition and removal of mediastinal tumors continue to be important, and we believe this facet is a significant part of the reasoning behind the continuation of chest film admission surveys of college students and other young adults in preemployment and hospital registration procedures. Other benign and malignant pulmonary lesions will be demonstrated subsequently, as their absolute identification requires their removal; technical advances in thoracic surgery now permit this aggressive approach to otherwise unidentifiable pulmonary and mediastinal lesions.

From the standpoint of intrathoracic neoplasm we may conclude that (1) intensification of survey efforts in men over 40 years of age is urgently

needed, in terms of extension of techniques of surveying, inclusion of larger numbers of the older male population, and periodic reexamination, and (2) we should continue to encourage surveys of young adults at the college and pre-employment levels to find otherwise unidentified mediastinal and pulmonary abnormalities, some of which will prove to be benign, potentially malignant, or malignant neoplasm.

Cardiovascular Abnormality. The revolution in intrathoracic surgical techniques has included many advances in cardiovascular surgery. There are many adults who have relatively asymptomatic, correctable lesions, such as coarctation of the aorta, patent ductus arteriosus, and septal defects which are better treated before complications or irreversible pulmonary changes occur. It is this group of patients which is important to identify in surveys of young adults, such as college students or persons covered by pre-employment surveys.

From the standpoint of cardiovascular disease, it is desirable to consider three groups of patients: (1) those with previously undiagnosed congenital abnormalities, (2) those with rheumatic heart disease which is best treated surgically before secondary changes progress too far, and (3) those with cardiomegaly or evidence of congestive failure whose discovery will permit earlier institution of appropriate therapy. It appears that surveying young adults is justified by the first two considerations and that periodic examination of persons in the older age groups would satisfy the third.

Industrial Hygiene. The pre-employment chest survey not only satisfies the industrial requirements, but serves as well to insure partial coverage of the young and middle-aged adult population for other nonindustrial diseases. The periodic reexaminations in industries with dust hazards serve the ends of the search for neoplasm in men over 40. Inasmuch as nearly all industrial medical departments are equipped for rapid chest filming, it is suggested that they might consider offering their employees periodic reexamination annually for all and semiannually for men over 40, so that the other medical goals of chest surveying can be achieved in addition to strictly industrial objectives.

Survey Film Interpretation. The problem of satisfactory interpretation of survey films, particularly in regard to the more subtle changes in the recognition of early roentgenologic signs of disease, has engaged the attention of radiologists and statisticians for more than two decades. Garland reported a variation of 9 to 24% in interpretations by different readers and a variation of 3 to 31% for the same reader. Zwering and associates concluded that the problem of error in interpretation of chest films in mass radiographic surveys is of extreme practical importance and can be minimized to some extent by having films read by more than one reader. Bauer recently reevaluated in detail the problem of reliability of film interpretation. He tested

eight readers with a series of 3,268 photofluorograms, among which the films of 99 persons with clinically verified active pulmonary lesions were distributed. Single reading resulted in an adequate evaluation of an average of 61% of test cases. Independent dual reading followed by consultation of the readers on their differences improved the results to an average of 76%. Excellence of individual performance is variable and, to a degree, related to experience. While dual reading more than doubles the professional time required for interpretation, the increased yield justifies the investment; false economy in the final phases of film interpretation and follow-up may well vitiate the entire program.

Discussion and Summary. The influence of various changes in medical practice in relation to survey chest filming has been indicated. These considerations can be integrated to see which population groups should be given special attention.

It has been the experience of the authors that neonatal chest surveying is of little value.

Patients registering at general hospitals and clinics continue to be a fruitful source for significant survey findings.

Survey filming of children in elementary and high schools seems justified only as a limited supplement to tuberculin skin testing. Coverage of young adult population groups by college and pre-employment chest surveys is justified to detect congenital abnormalities, mediastinal masses, acquired cardiovascular disease, and active pulmonary disease.

Periodic examination of industrial workers exposed to hazardous environment continues to be necessary. Extensions of chest surveys among middle-aged and older men are urgently needed to see if an improvement in the cure rate for bronchial neoplasm can be so achieved. Evaluation of a semiannual routine checkup should be carried out on a broad basis.

In view of the significant increase in incidence of tuberculosis among older persons, facilities should be extended to survey this group periodically, possibly as part of the "senior citizen" programs. Early recognition of acquired cardiovascular disease and its complications would thus also be facilitated.

All possible efforts should be made to reduce the radiation exposure incident to survey procedures. It should be emphasized that gonadal exposure is of little significance in middle-aged and older age groups, that adequate gonadal protection can be assured in younger age groups, and that somatic exposure can be reduced to a level of complete safety. (W.M. Whitehouse, F.J. Hodges, Changing Emphasis in Chest Film Survey Procedures: Postgrad. Med., 27: 18-23, January 1960)

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Leishmaniasis Acquired by Contagion

The transmission of all forms of leishmaniasis depends ordinarily upon phlebotomus sandflies. Due to Britain's climate—which does not suit the insect vectors—there is freedom of infection and absence of any reservoir of infection in the population or in animals.

The American Geographical Society (1954) map of the world distribution of leishmanial infections shows that cutaneous leishmaniasis (oriental sore) occurs in parts of Europe, Africa, and Asia. It is found in the coastal belt of the countries of the whole Mediterranean basin, across Turkey to the Caspian Sea, down through Iraq to the Persian Gulf, across Iran, Afghanistan, and Turkistan, across Pakistan and northern India, and in Ceylon. It occurs in West Africa from the Gambia to the Cameroons, and in East Africa—particularly in Ethiopia. Occasional cases have been recognized in other parts of West and East Africa, in Malaya, and in various parts of eastern Asia. Isolated cases have also been reported nearer Britain, in Portugal, and northern Spain.

The author does not particularly refer to visceral leishmaniasis (kala-azar) or to American leishmaniasis. However, the geographical distribution of visceral leishmaniasis is a good deal wider than is usually realized, yet overlaps remarkably little with that of oriental sore. An account of leishmaniasis in all its forms is readily accessible in Manson's *Tropical Diseases* (Manson-Bahr 1945).

The main purpose of this paper is to report a case of leishmaniasis which is unprecedented in that the patient had never been out of the British Isles before she acquired the infection, that she acquired the infection from direct contact with her husband, who later proved to have had a symptomless recurrence of visceral leishmaniasis contracted several years earlier in northeastern Africa.

Case Record. A woman, aged 38, noticed a small, rather itchy papule a little behind the vaginal orifice and to one side of the midline. As it was enlarging she went to their doctor—her husband's brother—a month later. The lesion was then a shiny, purple, dome-shaped nodule a centimeter in diameter, painless and with a small, central excoriation which the patient attributed to chafing by sanitary towels. Nothing was done about the lesion at that time. A month later it was almost twice as large: the central erosion had become a round, sharply outlined, steep-sided but quite shallow ulcer, about a centimeter across with a grey base. There was now a group of moderately enlarged, firm, painless, lymph nodes medially in the groin on the same side. Her doctor diagnosed primary syphilis, although he had never seen a chancre during his entire medical experience.

Blood for a Wassermann reaction was sent to a laboratory where, it so happened, it was still the practice for the entire Wassermann procedure to be carried out by the pathologists. Unfortunately, the senior registrar

whose turn it was to do the Wassermann tests had no previous experience of complement-fixation techniques, and as he had just been newly appointed to his job he did not like to admit to this gap in his training. It has become clear that, in this patient's case, he must have either misconducted the test or misinterpreted its result which was reported to her doctor as positive.

The patient was then seen by a gynecologist who agreed that the lesion could be syphilitic and recommended appropriate treatment. He did, in fact, say that the Wassermann reaction should be repeated and a Kahn test done as a confirmatory precaution before treatment was started, but this advice was overlooked and a month's course of penicillin was begun without further ado. The patient had never had treatment with penicillin before. During the last few days of the course she felt unwell: she became somewhat feverish and developed joint pains and an erythematous rash on her face and body. The significance of this syndrome was not realized at the time, but it was almost certainly a reaction to penicillin to which she is now known to have become sensitive. Her Wassermann reaction became positive whenever a penicillin reaction was provoked (her Kahn-test result was negative at all times). This may explain why the Wassermann reaction at the end of the month's course of penicillin was reported (this time, by chance, in a different laboratory) as "++"; the Kahn test, done then for the first time, was negative.

Although by then the local lymphadenopathy had disappeared, the vulvar sore was larger than before the course of penicillin. For some reason which is no longer clear, a darkfield examination was carried out now, for the first time; it was reported as negative.

Both the patient and her husband denied having had sexual intercourse with anyone else. As the husband had no genital lesions and his Wassermann and Kahn reactions were negative, his wife's truthfulness seemed to be in doubt; he left home. Fortunately, it was at last beginning to be realized that there was something inconsistent between the clinical findings and the supposed diagnosis of syphilis. Biopsy of the ulcer was therefore carried out, 5 weeks after the end of the course of penicillin and 18 weeks after the patient first noticed the lesion.

The sections showed a chronic inflammatory reaction in the dermis, nondescript for the most part with a small area in which typical Leishman-Donovan bodies were readily recognized within macrophages. (Their presence was confirmed in stained films of exudate from the ulcer, and they were also demonstrated by darkfield examination.) When the technician who had been entrusted with the first darkfield examination was shown the Leishmania in the later preparation, he recognized at once that he had seen them in the earlier specimen. He explained that he had not drawn anyone's attention to them because he had only been told to look for treponemas. Attempts were made to cultivate the organism from fluid obtained by puncture of the unbroken skin over the periphery of the lesion; they failed because of bacterial contamination.

As the patient had never been out of the British Isles, it was necessary to consider various seemingly unlikely ways by which she could have become infected. There was no immediately obvious solution of this mystery, although all sorts of possible sources of infected vectors were looked for in her environment. By this time, it had been possible to get in touch again with her husband who had gone abroad; he returned home at once with the answer—which unwittingly he had all along possessed—in the form of a history of kala-azar. He had contracted kala-azar while on service in the Sudan, Ethiopia, and Uganda in 1941 or thereabouts. This had been only erratically treated owing to the exigencies of the times and of his work, and, later, to detention as a prisoner-of-war. The drugs used were probably antimony potassium tartrate and ethylstibamine ("Neostibosan"). By 1944, he was pronounced cured, only to develop typical post-kala-azar dermal leishmaniasis a year later. This, in its turn, cleared up on treatment with pentamidine isethionate ("Lomidine"), and from then onwards he was free from all symptoms. He married in 1953, 8 years later. His wife's leishmanial ulcer developed in 1955, 2 years later after their marriage.

Although at this time he was completely symptomless and for 10 years had been aware of nothing amiss with his health, examination showed that the tip of his spleen was palpable four centimeters below the costal margin; his liver was palpable a centimeter below the costal margin, and there was generalized lymph-node enlargement. It seems likely that a complete physical examination instead of the perfunctory inspection of his genitalia at the time when his doctor looked for evidence of syphilis could have led to a prompt appreciation of the true condition of his health and of the nature of his wife's ulcer. When examined, he was afebrile. The serum-protein levels were normal. Napier's formol-gel test and the urea-stilbamine test were negative. Apart from slight granulocytopenia, his blood was normal. The marrow was not examined. Biopsy of an axillary lymph node showed many discrete, small foci of histiocytosis; it was evident that the histiocytes contained minute particles, and at higher magnifications these were clearly recognizable as Leishmania. They were well seen in films of fluid from the node, and they were successfully cultivated in "N. N. N." (Novy, MacNeal, and Nicolle medium), in which typical flagellate forms ("leptomonads") developed abundantly within 5 days on incubation at 22° C. He was treated with pentamidine isethionate (0.2 grams intravenously daily for 10 days). A month later, there was no detectable clinical abnormality, and this is his present state. Before the course of treatment, attempts were made repeatedly but unsuccessfully to demonstrate Leishmania in his urine, prostatic secretion, and semen.

The woman's lesion healed satisfactorily when she was given a course of urea stibamine (0.2 grams intravenously daily for 10 days); it has not recurred (January 1960). She and her husband have reestablished their home and have had their first child which was born uneventfully 18 months after cure of the ulcer. (W. St. C. Symmers, *Leishmaniasis Acquired by Contagion*: *Lancet*, 1: 127-132, 16 January 1960) (CommDisBranch, PrevMedDiv)

Adenovirus Infections in Naval Recruits

In this study of naval recruits in a training center for evidence of adenovirus infection over a period of one year, 28 adenoviruses were isolated from 647 samples (4.4%) and 188 positive complement-fixation tests were demonstrated in 1,155 paired sera (16%); 7 of the 28 men whose swab specimens were positive for adenovirus had no symptoms of respiratory disease. In the first 6 weeks of training, while the adenovirus isolations occurred in 4% of the recruit population, 59% of those from whom specimens were taken had some respiratory symptom or symptoms, most of which could not, however, on the virologic and serologic findings, be attributed to adenovirus infection. Type 4 adenovirus was the main type isolated and determined serologically. It is concluded that mild illnesses due to adenovirus infection as well as asymptomatic infections with these viruses have been demonstrated, but that illness due to adenovirus infection alone, or in combination with other agents, may exhibit a wide range of severity. (J. T. Grayston, et al., J. Infect. Dis., 104: 61-70, January - February 1959)

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Incidence of Poliomyelitis

During the ninth week of 1960 ending March 5, a total of 16 cases, 7 paralytic, were reported to the National Office of Vital Statistics, Public Health Service, Department of Health, Education, and Welfare. Since the beginning of the year, the incidence has remained at low levels and this is the second consecutive week during which comparable 6 weeks totals for 1960 were lower than 1959.

The total for the first 9 weeks of 1960 now stands at 193 cases of which 132 are paralytic:

	<u>Total (cumulated weekly) through 9th week</u>				
	<u>1960</u>	<u>1959</u>	<u>1958</u>	<u>1957</u>	<u>1956</u>
Paralytic	132	138	95	218	474
Total	193	192	163	400	825

(Communicable Disease Center, Atlanta, Ga., Poliomyelitis Surveillance Report No. 194, 11 March 1960)

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Policy

The U. S. Navy Medical News Letter is basically an official Medical Department publication inviting the attention of officers of the Medical Department of the Regular Navy and Naval Reserve to timely up-to-date items of official and professional interest relative to medicine, dentistry, and allied sciences. The amount of information used is only that necessary to inform adequately officers of the Medical Department of the existence and source of such information. The items used are neither intended to be, nor are they, susceptible to use by any officer as a substitute for any item or article in its original form. All readers of the News Letter are urged to obtain the original of those items of particular interest to the individual.

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